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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,667	BARNIKOL ET AL.	
	Examiner	Art Unit	
	ABIGAIL FISHER	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19 and 21-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 21-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Receipt of Amendments/Remarks filed on April 4 2008 is acknowledged. Claim 20 was/stand cancelled. Claims 1, 4, 7-13, 18 and 21-23 were amended. Claims 24-27 were added. Claims 1-19 and 21-27 are pending.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the octane diol referred to in the specification is 1,2-octane diol however as claimed it is 1,6-octane diol. Applicant has attempted to overcome the rejection by amending the claims to be directed to the genus octane diol however the specification does not provide support for the alcohol genus octane diol. Applicant additionally amended the claim to have a choice of alcohol be hexane diol. However, the specification only provides support for 1,2-hexane diol.

Therefore, the disclosure is objected to because of the following informalities: the specification does not provide support for the term octane diol or hexane diol.

Appropriate correction is required.

Claim Objections

The objection of claim 11 because of the following informalities: the examiner believes there is a type. The claim as written states, "wherein it dermatologically

effective agents...". It is believed that the word contains is missing is **withdrawn** in light of Applicant's amendment filed on April 4 2008.

The objection of claim 20 because of the following informalities: the examiner believes there is a typo is **moot** in light of Applicant's amendments filed on April 4 2008 cancelling claim 20.

The objection of claims 18 and 22 under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim is **withdrawn** in light of Applicant's amendments filed on April 4 2008.

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Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The rejection of claims 20-23 under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101 is **withdrawn** in light of Applicant's amendments filed April 4 2008.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The rejection of claims 4, 7 and 9 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is **withdrawn** in light of Applicant's amendments filed April 4 2008.

Claims 1, 4, 8, 18, 2-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has amended the claims to claim hexane diol and octane diol. The original disclosure provides support for the species 1,2-hexane diol, 1,2-octane diol, 1,6-octane diol, and 1,8-octane diol. However, the original disclosure does not provide support for the genus hexane diol or octane diol. This is a new matter rejection.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 26 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The specification, while being enabling for a method for topically treating skin and a method for applying a microemulsion, does not reasonably provide enablement for a method for treating and caring of hair. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

To be enabling, the specification of the patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation. In re Wright, 999 F.2d 1557, 1561 (Fed. Cir. 1993). Explaining what is meant by "undue experimentation," the Federal Circuit has stated:

> The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed to enable the determination of how to practice a desired embodiment of the claimed invention. PPG v. Guardian, 75 F.3d 1558, 1564 (Fed. Cir. 1996).[1]

The factors that may be considered in determining whether a disclosure would require undue experimentation are set forth by In re Wands, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing Ex parte Forman, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

1) the quantity of experimentation necessary,
2) the amount of direction or guidance provided,
3) the presence or absence of working examples,
4) the nature of the invention,
5) the state of the prior art,

[1] As pointed out by the court in In re Angstadt, 537 F.2d 498 at 504 (CCPA 1976), the key word is "undue", not "experimentation".

6) the relative skill of those in the art,
7) the predictability of the art, and
8) the breadth of the claims.

These factors are always applied against the background understanding that scope of enablement varies inversely with the degree of unpredictability involved. In re Fisher, 57 CCPA 1099, 1108, 427 F.2d 833, 839, 166 USPQ 18, 24 (1970). Keeping that in mind, the Wands factors are relevant to the instant fact situation for the following reasons:

The nature of the invention and relative skill level

The invention relates to a convertible water-in-oil microemulsion. The relative skill of those in the art is high, that of an MD or PHD.

The breadth of the claims

The claim is thus very broad insofar as it recites treating and caring, but the claim does not indicate what treatment is occurring. It is unclear what is actually being done to the hair. For instance, is the treatment of the hair for dry hair, damaged hair, curly hair, etc? The claim is also broad insofar as it recites treating with no indication of how the emulsion is actually treating the hair. The step of the instant claim is directed to providing a preparation. This preparation comprises the oil phase, the water phase, the emulsifiers, the surfactants, and at least one alcohol. This appears to be a base composition as no active ingredient is actually claimed. Therefore, no guidance is given as to which condition is actually being treated as well as what active ingredients would be necessary to treat the respective condition.

The amount of direction or guidance provided and the presence or absence of working examples

The specification provides plenty of guidance as to how the preparations of the instant invention can be utilized to treat the skin. However, the specification provides no direction or guidance for treating and caring for hair. No reasonably specific guidance is provided concerning useful therapeutic protocols for treating hair, other than stating that the microemulsions can be utilized to treat hair.

The quantity of experimentation necessary

Because the specification provides no guidance as to what condition is actually being treated with respect to hair, no one skilled in the art would accept the assertion that the instantly claimed agents could be predictably used treat hair as inferred by the claim and contemplated by the specification. Accordingly, the instant claims do not comply with the enablement requirement of §112, since to practice the invention claimed in the patent a person of ordinary skill in the art would have to engage in undue experimentation, with no assurance of success.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The rejection of claims 20-23 under 35 U.S.C. 112, second paragraph, because while the claims provide for the "use" of a micro-emulsion, the claims do not set forth any steps involved in the method/process, and thus it is unclear what method/process

they are intending to encompass is **withdrawn** in light of Applicant's amendments filed on April 4 2008.

The rejection of claims 7 and 23 under 35 U.S.C. 112, second paragraph, for insufficient antecedent basis is **withdrawn** in light of Applicant's amendments filed on April 4 2008.

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 18 recites the broad recitation 0.1 to 90 wt % of an aqueous phase and 45 to 90 wt % of a liquid oil phase, and the claim also recites 1 to 10 wt % of a water or aqueous phase and 1 to 50

wt % of an oil phase which is the narrower statement of the range/limitation. It appears that the second sets of ranges are those values after conversion however, the claims are also vague and indefinite because it is unclear if these second set of ranges are actually the result of the conversion.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The rejection of claim 21 under 35 U.S.C. 103(a) as being unpatentable over Pezzuto et al. (US Patent No. 6414037) is **withdrawn** in light of Applicant's amendments filed on April 4 2008 deleting optionally converted.

Claims 1-7, 9, 11-14, 18-19, 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al. (US Patent No. 5646109, found on PTO Form 1449).

Applicant Claims

Applicant claims a water-in-oil micro-emulsion that is free from cross-linking agents and comprises a liquid oil phase, a mixture of one or more water-in-oil and one or more oil-in-water surfactants, one or more emulsifiers, at least one alcohol selected from the group consisting of monovalent C1-C8 alcohols, hexane diol and octane diol, and an aqueous phase. The micro-emulsion has a particle size of 20 to 400 nm. The emulsion is convertible to a secondary water-in-oil micro-emulsion or an oil-in-water micro-emulsion.

The micro-emulsion also contains one or more active substances that are soluble in water or soluble in fat/oil. The micro-emulsion can also contain a mixture of both water-soluble and fat/oil soluble substances. The micro-emulsion also comprises

additives. The emulsifiers of the micro-emulsion include one or more lecithins, phosphatidyl cholines or mixtures. The surfactants of the emulsion are non-ionic and those that are W/O surfactants have an HLB value of 3 to 7 and those that are O/W surfactants have an HLB of 9 to 18.

The water-soluble active substances that are suitable include: amino acids, peptides, protein hydrolysates, proteins, saccharides, oligosaccharides, polysaccharides, hormones and substances similar to hormones, antioxidants, vitamins and pro-vitamins, AHA acids, NMF, oxidants, plant extracts, flavonoids, and plant polyphenols or mixtures thereof.

The micro-emulsion additionally contains dermatologically effective agents which include: hormones, antimycotics, scar treatment agents, tanning agents, tars, keratinolytics, keratinoplastics, photocumarins, acelainic acid or mixtures thereof.

The additives in the micro-emulsion include: electrolytes, oxidants, chelating substances, diffusion reinforcing agents, penetration promoting agents, moisturizers or mixtures thereof. The specification indicates that electrolytes include those based on organic anions like acetates (page 38 of the specification).

The micro-emulsion can also contain hemoglobin or myoglobin as well as antioxidants, glutathione, super-oxide dismutase, melatonin, flavonoids, amino acids or mixtures thereof.

Applicant additional claims a method for producing a micro-emulsion where the oil phase and any fat-soluble active substances, the surfactant (s), the emulsifier (s), the

alcohol (s), additives if applicable, an aqueous phase, and any water-soluble active substance(s) are mixed at a temperature from 10 to 30 ºC. The primary water-in-oil is obtained and is converted to a secondary water-in-oil micro-emulsion or a secondary oil-in-water micro-emulsion with an aqueous phase.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Owen et al. is directed to water-in-oil micro-emulsion. Disclosed that the water-in-oil micro-emulsion system is formulated that upon addition of water an oil-in-water micro-emulsion is formed (column 3, lines 56-59). Additionally disclosed that the water-in-oil micro-emulsion that is directly administered to the body of animals and the body fluids themselves covert the water-in-oil micro-emulsion to an oil-in-water emulsion (column 3, lines 34-40). The particle size of these micro-emulsions is generally less than about 0.1 microns (100 nm) (column 1, line 25). Owen et al. does not specify using cross-linking agents. Additionally the term cross-linking does not appear any where within the patent.

The micro-emulsion comprises an aqueous phase, a pharmaceutically acceptable oil, a surfactant or mixture of surfactants, a water-soluble biologically active material or combination of materials (column 4, lines 49-55). There may be other adjuvants included as well in the amount from 0 to 20% by volume (column 5, lines 62-67).

The water content of the water-in-oil micro-emulsion is up to as high as 60 volume percent (column 5, lines 20-23). The water component of the aqueous phase can be partially or fully replaced by the incorporation of another poly biologically

compatible solvent such as polyhydrolic alcohols (column 5, lines 43-46). Therefore the total volume percent of water can be completely replaced by alcohol or contain no alcohol.

The oil may be liquid at room temperature (column 6, lines 6-7). The micro-emulsion can contain from about 30 to 99 volume percent of an oil phase (claim 12). The surfactant content ranges from 5 to 75 volume percent (column 5, line 29-31). Disclosed is that a mixture of surfactants is preferred when the water-in-oil micro-emulsion has an aqueous phase of greater than 20% by volume (column 6, lines 65-67). This mixture includes a high HLB surfactant or a mixture of high HLB surfactants. Sometimes it is preferred to have at least one surfactant with a high HLB and one surfactant with a low HLB resulting in an average HLB value from 7 to 14. High HLB surfactants have an HLB greater than 9 while low HLB have a value below 5 (column 7, lines 1-10). Non-ionic surfactants are suitable (column 7, lines 29-54). Example 4 includes Capmul MCM that is a water-in-oil surfactant with an HLB of 5 and Cremophor EL that is an oil-in-water surfactant with an HLB of 13.5 in a ratio of about 1:10.

While Owen et al. does not use the terminology emulsifier. It is well known in the art that an emulsifier is also known as a surfactant. Disclosed as suitable surfactants include lecithin (column 7, line 26). One preferred system includes liquid lecithin from central soya, which is a soybean lecithin, in an amount from about 1-2.5% w/w. This example also includes other surfactants like polyoxyethylene glycerol triricinoleate (column 14, lines 42-52).

The water-soluble active material that may be incorporated include: proteins, peptides, and other pharmaceutically active compounds (column 7, lines –59-62). The active material can comprise from 10^{-9} to 100 weight/volume % of the aqueous phase (column 5, line 14). Other material that is listed as suitable includes hemoglobin (column 8, line 5) and dismutases (column 8, line 35).

One preferred water-in-oil micro-emulsion includes as an active agent calcitonin, which is a generic peptide hormone (column 2 lines 53-54 and column 14, line 49). This example includes 100 mM acetate buffer, which can also be viewed as an electrolyte (column 14, line 49).

Example 1 discloses a method of producing the micro-emulsion. The components (oil phase, water phase, and surfactants) were mixed at 25 °C for about 3 minutes to provide a clear stable water-in-oil micro-emulsion. In example 2 water was then added to this micro-emulsion to convert the micro-emulsion to an oil-in-water emulsion.

Owen et al. discloses that the micro-emulsion can be used topically as well and It is ideally suited for wound care such burn care(column 15, line 14). The topical micro-emulsion is preferably presented in the form of a solid, salve or gel (column 15, lines 38-39).

Ascertainment of the Difference Between Scope the Prior Art and the Claims *(MPEP §2141.012)*

Owen et al. do not specify a particular amount of alcohol that is suitable.

Owen et al. do not specify a particular ratio of surfactants in the range of 1:4 to 1:1.2.

Owen et al. do not specify that the water-soluble active material is hemoglobin or dismutase or a combination of the two.

Owen et al. do not exemplify utilizing the microemulsion in a topical treatment of burn care.

Finding of Prima Facie Obviousness Rational and Motivation (MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art to vary the amount of alcohol of the invention depending on the other water-soluble agents added. One would have been motivated to do this because it is known based on the disclosure of Owen et al. that alcohols are acceptable as well as the fact that sometimes organic water-miscible solvents are needed to help dissolve the other water-soluble agents that may be added.

It would have been obvious to one of ordinary skill in the art to modify the ratio of surfactants in order to determine the optimal ratio of surfactants. It would have been obvious to one of ordinary skill in the art at the time of the invention to engage in route experimentation to determine optimal or workable ranges that produce excepted results.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. **In re Aller, 220 F. 2d 454, 105 USPQ 233 (CCPA 1955).**

It would have been obvious to one of ordinary skill in the art to use hemoglobin and/or dismutase as the water-soluble active material. One of ordinary skill in the art would have been motivated to do this because Owen et al. discloses them as a suitable water-soluble active material as well as combinations of biologically-active material is acceptable. A person of ordinary skill has a good reason to pursue the known options within their technical grasp, for example those disclosed by Owen et al. as being suitable. Thereby resulting in the practice of the instant application with a reasonable expectation of success.

It would have been obvious to one of ordinary skill in the art to use the microemulsions of Owen et al. in a topical preparation for the treatment of burn care. One of ordinary skill in the art would have been motivated to utilize these formulations in this type of treatment because Owen et al. indicate that these are the types of treatments that the microemulsions can be utilized in.

The applicant has disclosed that the conversion of the water-in-oil micro-emulsion is converted to a secondary water-in-oil or oil-in-water micro-emulsion. The process as disclosed is that the primary micro-emulsion is mixed with one part aqueous solution resulting in a clear opaque micro-emulsion. This appears to be the same process that Owen et al. uses to arrive at their secondary oil-in-water emulsion. There does not appear to be any different process steps established by applicant that would differentiate the secondary emulsion formed by Owen et al. and that of the applicant.

Regarding instant claim 26, since applicant has provided no guidance to what condition is actually being treated with respect to the hair and has not claimed any

particular active ingredients with respect to the method of treating and caring for hair, the microemulsion disclosed by Owen et al. is the same as instantly claimed. Since Owen et al. teach that the composition can be applied topically; one location for the topically applied preparation would be the arm or the legs. Both of these locations on the body possess hair. Therefore, when topically applying the preparation of Owen et al. one is practicing instant claim 26 as it is being applied to the hair while simultaneously being applied to the skin.

Response to Arguments

Applicant argues that (1) Owen et al. is concerned with a W/O microemulsion which readily converts into an O/W emulsion. Applicant argues that (2) the instant w/o microemulsion does not require modifiers which are required by Owen et al. Applicant argues that (3) it is doubtful that the alcohol compounds mentioned by Owen et al. can actually able to augment the HLB and the only exemplified W/O to O/W microemulsion converted no propylene glycol is used. Applicant argues that (4) Owen et al. is designed to administer water soluble active ingredients whereas in Applicant's claim 2 (Applicant wrote claim 1 but the examiner believes this is a typo as this limitation does not appear until claim 2) both water as well oil soluble ingredients may be utilized. It appears that applicant is attempting to indicate that (5) Owen et al. is not enabled for the convertibility of an o/w microemulsion to w/microemulsion. Applicant argues that (6) their invention as claimed is from 1 to 10% water or aqueous solutions and Owen et al. includes up to 20 vol.% preferably 30-60%. Applicant argues that (7) Owen et al. does not suggest any alcohols but rather suggests specific modifiers and in applicant's

invention alcohol can be absent. Applicant argues that (8) Owen et al. indicate that only in case of a high water content can ingredients with low solubility or high amounts of active ingredients be chosen and as instantly claimed 10% water is the upper limit of the water content.

Applicant's arguments filed April 4 2008 have been fully considered but they are not persuasive.

Regarding applicant's first argument, Owen et al. clearly teach a w/o micromeulsion that is converted upon the addition of water to an o/w microemulsion (column 3, liens 56-58). While it is additionally possible to convert the microemulsion into a regular emulsion, Owen et al. teach that the corresponding microemulsion can be formed. Owen et al. teach what is necessary to form the corresponding microemulsion (column 12, lines 25-44).

Regarding applicant's second argument, that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., lack of modifiers) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). While Applicant's invention might not require the modifiers, the claims as written do not indicate this feature. The comprising claim language provides for other ingredients to be added.

Regarding applicant's third argument, "The arguments of counsel cannot take the place of evidence in the record." *In re Schulze*, 346 F.2d 600, 145 USPW 716, 718

(CCPA 1965), *In re Huang*, 40 USPQ 2d 1685 (Fed. Cir. 1996), *In re De Blauwe et al.*, 222 USPQ 191, (Fed. Cir. 1984). Applicant has not proved any factual evidence that the alcohol compounds can not actually augment the HLB, if this is even necessary. Furthermore, the rejection is made under 103 and does not need to exemplify all embodiments, only suggest. "Disclosed examples and preferred embodiments do not constitute a teaching away from the broader disclosure or non-preferred embodiment." *In re Susi,* 440 F.2d 442, 169 USPQ 423 (CCPA 1971). Therefore, Owen et al. clearly teach that alcohols can be included (column 2, lines 44-48) and their incorporation would have been obvious to one of ordinary skill in the art.

Regarding applicant's fourth argument, while Owen et al. does elaborate more on the incorporation of water soluble ingredients, Owen et al. does disclose that oil-soluble drugs can be included (column 5, line 63). Further more, the selection of a specify drug and consequently its corresponding solubility is considered prima facie obvious depending on the desired condition/symptoms to be treated.

Regarding applicant's fifth argument, "The arguments of counsel cannot take the place of evidence in the record." *In re Schulze,* 346 F.2d 600, 145 USPW 716, 718 (CCPA 1965), *In re Huang*, 40 USPQ 2d 1685 (Fed. Cir. 1996), *In re De Blauwe et al.*, 222 USPQ 191, (Fed. Cir. 1984). Applicant has not proved any factual evidence that the o/w microemulsion of Owen et al. can not be converted to an o/w microemulsion. The examiner additionally points out that even though the conversion of Owen et al. requires modifiers and Applicant indicates that their invention does not, the claims do not reflect this feature. Furthermore, the examiner directs applicant's attention to MPEP

2121: PRIOR ART IS PRESUMED TO OPERABLE/ENABLING. Once such a reference is found, the burden is on applicant to provide fats rebutting the presumption of operability. *In re Sasse*, 629 F.2d 675, 207 USPQ 107 (CCPA 1980). Also see MPEP 716.07. The examiner further points to MPEP 2121.01 (II): "Even if a reference discloses an inoperative device, it is prior art for all that it teaches." Clearly, Owen et al. teach the conversion of an o/w microemulsion to an o/w microemulsion.

Regarding applicant's sixth argument, the disclosed amount of water of Owen et al. "up to 20 vol. %" includes percentages from 0 up to 20 %. This would include the applicant's claimed range from 1 to 10%. It would have been obvious to one of ordinary skill in the art to adjust the amount of water present depending on the type of microemulsion desired as well as other water soluble ingredients included. Furthermore, as pointed out earlier, the rejection is made under 103 and does not need to exemplify all embodiments, only suggest. "Disclosed examples and preferred embodiments do not constitute a teaching away from the broader disclosure or non-preferred embodiment." *In re Susi,* 440 F.2d 442, 169 USPQ 423 (CCPA 1971).

Regarding applicant's seventh argument, Owen et al. discusses modifiers and alcohols in two different sections. While modifiers listed may overlap and also be alcohols, Owen et al. clearly teach that alcohols can be present in the water phase and if desired partially or fully replace the water in the aqueous phase. While applicant's instant claims indicate that the lower limit of the alcohol content is 0%, the claim is directed to a range in the amount of alcohol that can be included. Therefore, some alcohol can be present.

Regarding applicant's eighth argument, what Owen et al. specifically states is that a microemulsion having a high aqueous phase content is preferred in those situations where the biologically-active material has a relatively low solubility in water or where a relatively high quantity of the biologically active material. As instantly claimed, the examiner agrees that the maximum amount of water is 10% however, the water phase can additionally be comprised of alcohol in an amount up to 15%. Owen et al. defines the aqueous phase as encompassing a phase of water, such polar solvents mention, and mixtures thereof (column 5, lines 49-51). Therefore, the "high content aqueous phase" can be comprised of water and polar solvents. Furthermore, it would have been obvious to one of ordinary skill in the art to include alcohol in the aqueous phase comprised of biologically-active material that has a relatively low solubility in water in order to aid the in the solubility of the active material.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al. in view of Chen et al. (US Patent No. 6267985).

Applicant Claims

Applicant claims a water-in-oil micro-emulsion as claimed above where in the alcohol is selected from ethanol, isopropanol, butanol, 1,6-octane diol, or 1,2-hexane diol.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Owen et al. are discussed above. Specifically Owen et al. teaches that the water component of the aqueous phase can be partially or fully

replaced by the incorporation of another poly biologically compatible solvent such as polyhydrolic alcohols, like propylene glycol (column 5, lines 43-46).

Chen et al. is directed to pharmaceutical compositions for improved delivery of therapeutic agents (abstract). Chen et al. discloses that compounds that are suitable to be used in pharmaceutical compositions that can aid or enhance the solubility of therapeutic agents include alcohols and polyols such as ethanol, isopropanol, butanol, and propylene glycol (columns 33-34, lines 63-67 and 1-2).

Ascertainment of the Difference Between Scope the Prior Art and the Claims *(MPEP §2141.012)*

Owen et al. does not specify using ethanol, isopropanol or butanol as alcohols that are suitable in the micro-emulsion.

Finding of Prima Facie Obviousness Rational and Motivation (MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art to modify the alcohols that are used in the micro-emulsion. One of ordinary skill would have been motivated to do this in order to better solubilize the therapeutic agent present in the invention. It would have been obvious to one of ordinary skill in the art at the time of the invention to engage in route experimentation to determine optimal or workable ranges that produce excepted results.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. **In re Aller, 220 F. 2d 454, 105 USPQ 233 (CCPA 1955).**

Response to Arguments

Applicant argues that the alcohols of the instant microemulsions are neither used for enhancing solubility of any compound nor for providing convertibility.

Applicant's arguments filed April 4 2008 have been fully considered but they are not persuasive.

In response to applicant's argument, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Chen et al. is utilized to show the functional equivalency of various monovalent alcohols and polyethylene glycol. Therefore, it would have been obvious to one of ordinary skill in the art to substitute one alcohol with another with a reasonable expectation of success.

Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al. in view of Nagahama et al. (US Patent No. 6303662).

Applicant Claims

The fat/oil soluble active substances that are suitable include: antioxidants, vitamins and pro-vitamins, unsaturated fatty acids, ceramides, ether oils or mixtures thereof.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Owen et al. are discussed above. Specifically Owen et al. discloses that oil-soluble drugs can also be included (column 5, lines 62-63). The amount that can be added is from 0 to 20% by volume (column 5, line 66).

Nagahama et al. '662 discloses micro-emulsions comprising highly polar and fat-soluble oil drugs (abstract). Examples of highly polar and fat-soluble dugs include fat-soluble vitamins such as riboflavin (column 3, lines 26-28). Riboflavin is especially preferred because of the stability of the drug (column 3, lines 60-61).

Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)

Owen et al. does not specify oil-soluble drugs that can be included in the micro-emulsion.

Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)

It would of been obvious to one of ordinary skill in the modify the invention of Owen et al. and include Riboflavin as the oil-soluble drug. One would have been motivated to do this because it is disclosed as a suitable oil-soluble drug to be used in micro-emulsions and it has good stability and therefore there is a reasonable expectation that it will not adversely affect the other material in the micro-emulsion. Thereby arriving at the instant application with a reasonable expectation of success.

Response to Arguments

Applicant argues that Owen et al. does not disclose the use of oil soluble agents and therefore the incorporation of the oil soluble agents of Nagahama et al. '662 can not be utilized in the invention of Owen et. al.

Applicant's arguments filed April 4 2008 have been fully considered but they are not persuasive.

Owen et al. clearly indicates that oil soluble drugs can be included (column 5, line 63). Further more, the selection of a specify drug is considered prima facie obvious depending on the desired condition/symptoms to be treated.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al. in view of Nagahama et al. (US Patent No. 6140375).

Applicant Claims

Applicant claims that the water-in-oil micro-emulsion further contains glucose.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Owen et al. are disclosed above. Specifically Owen et al. discloses that flavors can be included in the micro-emulsion.

Nagahama et al. '375 discloses a micro-emulsion (abstract). This micro-emulsion includes sweetening agents like glucose (column 4, lines 9-10).

Ascertainment of the Difference Between Scope the Prior Art and the Claims *(MPEP §2141.012)*

Owen et al. does not specify the types of flavors that can be added.

Finding of Prima Facie Obviousness Rational and Motivation (MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art to include glucose in the invention of Owen et al. One of ordinary skill would have been motivated to do so because if the micro-emulsions are going to be administered orally it would be advantageous to have a sweetener added to minimize the bitter taste that can accompany orally administered drugs. Thereby arriving at the instant application with a reasonable expectation of success.

Response to Arguments

Applicant argues that in the instant invention that the sugar is utilized in very low amounts whereas Owen et al. uses sugar in high amounts.

Applicant's arguments filed April 4 2008 have been fully considered but they are not persuasive.

Owen et al. teach that adjuvants such as flavor can be incorporated and when they are incorporated they are in amounts from 0 to 20% by volume. Owen et al. does not specify the types of flavors that can be incorporated. To cure this deficiency, Nagahama et al. '375 is relied upon. Nagahama et al. '375 teaches sweetening agents like glucose. Therefore, one of ordinary skill in the art would have been motivated to utilize glucose in an amount from 0 to 20% by volume because this is amount taught by Owen et al. as suitable. Furthermore, it is noted that the features upon which applicant

relies (i.e., low glucose content) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al. in view of Gehlsen (US PUGPUB No. 2001/0018059) and Mooney et al. (US Patent No. 5814031) and Martin (US Patent No. 5674912).

Applicant Claims

Applicant claims a water-in-oil micro-emulsion as recited above wherein it contains plant extracts in an amount of 0.1 wt. % to 5 wt. %, 0.1 wt. % to 5 wt. % ether oils, 0.1 wt. % to 10 wt. % AHA acids, 0.01 to 0.3 wt. % hormones or substances similar to hormones, 0.1 to 5 wt. % essential fatty acids, ceramides, or mixtures thereof.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Owen et al. are discussed above. Specifically one preferred water-in-oil micro-emulsion includes as an active agent calcitonin, which is a generic peptide hormone (column 2 lines 53-54 and column 14, line 49). The active material can comprise from 10^{-9} to 100 weight/volume % of the aqueous phase (column 5, line 14). Owen et al. discloses that the micro-emulsion can be used topically as well (column

15). It is ideally suited for wound care (column 15, line 14). The topical micro-emulsion is preferably presented in the form of a solid, salve or gel (column 15, lines 38-39).

Gehlsen discloses compositions for treating cell damage in relation to a variety of skin disorders (abstract). Examples include treatment of thermal burns (example 15) and chemical burns (example 16). Compounds disclosed that can reduce skin irritation include aloe vera and chamomile (paragraph 0035).

Mooney et al. discloses compositions that can be applied directly to a wound (abstract). Disclosed as skin care agents and therapeutics that can be added include alpha hydroxyl acid (column 5, lines 51-55).

Martin discloses therapeutic sunscreen-wound healing compositions (abstract). Disclosed is that sometimes it is advantageous to include anti-inflammatory agents. These anti-inflammatory agents include evening primrose oil (column 50, lines 9-15).

Ascertainment of the Difference Between Scope the Prior Art and the Claims *(MPEP §2141.012)*

Owen et al. does not disclose using other wound care agents in the micro-emulsion.

Finding of Prima Facie Obviousness Rational and Motivation (MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art to add other known wound care agents to the invention of Owen et al. One of ordinary skill would have been motivated to do so because Owen et al. disclosed that the micro-emulsions can be used for wound care therefore the addition of known compounds that are used for wound care would have at least an additive effect.

It would have been obvious to one of ordinary skill in the art to modify the amounts of wound care agents added in order to optimize the formulation of a wound care topical formulation. It would have been obvious to one of ordinary skill in the art at the time of the invention to engage in route experimentation to determine optimal or workable ranges that produce excepted results.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. **In re Aller, 220 F. 2d 454, 105 USPQ 233 (CCPA 1955).**

Response to Arguments

Applicants argue that it could not have been obvious to one of ordinary skill in the art to choose such agents disclosed in Gehlsen, Mooney et al., and Martin in view of stability and solubility problems which may arise in microemulsion as it is clearly pointed out by Owen et al. suggesting high water content and/or modifiers to achieve stable emulsions.

Applicant's arguments filed April 4 2008 have been fully considered but they are not persuasive.

Owen et al. teach that both water soluble and oil soluble active material can be included in the microemulsion. Even though the microemulsion of Owen et al. may require modifiers this does not preclude other wound care agents from being incorporated into the microemulsion of Owen et al. One of ordinary skill in the art would have been motivated to include the wound care agents of Gehlsen, Mooney et al. and Martin because Owen et al. teach that the microemulsions are used for wound care.

"The arguments of counsel cannot take the place of evidence in the record." *In re Schulze*, 346 F.2d 600, 145 USPW 716, 718 (CCPA 1965), *In re Huang*, 40 USPQ 2d 1685 (Fed. Cir. 1996), *In re De Blauwe et al.*, 222 USPQ 191, (Fed. Cir. 1984). Applicant has not proved any factual evidence establishing unobviousness.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABIGAIL FISHER whose telephone number is (571)270-3502. The examiner can normally be reached on M-Th 9am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abigail Fisher
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AF

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